Docket Nos. 00-0575/00-0618
(Consolidated)
ICC Staff Exhibit 3.0

DIRECT TESTIMONY

OF

ROCHELLE LANGFELDT

FINANCE DEPARTMENT

FINANCIAL ANALYSIS DIVISION

ILLINOIS COMMERCE COMMISSION

CONSUMERS GAS COMPANY

Docket Nos. 00-0575/00-0618
(Consolidated)

DECEMBER 22, 2000

1. Q. Please state your name and business address.

A. My name is Rochelle Langfeldt and my business address is 527 East Capitol Avenue, Springfield, Illinois 62701.

2. Q. By whom are you employed and in what capacity?

A. I am employed by the Illinois Commerce Commission ("Commission") as a Financial Analyst in the Finance Department of the Financial Analysis Division.

3. Q. Please briefly describe your work duties with the Illinois Commerce Commission.

A. My responsibilities include performing analyses and providing expert witness testimony on the cost of capital and related financial issues in docketed cases before the Commission.

4. Q. Please state your education background and work experience.

A. In May 1998, I received a Bachelor of Arts degree in Finance from Illinois College in Jacksonville, Illinois. In May 2000, I received a Master of Business Administration degree from the University of Illinois at Springfield. I have been employed by the Illinois Commerce Commission since June 2000.

5. Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to present my analysis of Consumers Gas Company's ("Consumers" and "Company") cost of capital and recommendation for a fair rate of return on rate base.

Cost of Capital

6. Q. Please summarize your cost of capital findings.

A. The overall cost of capital for Consumers is 10.81% as shown on Schedule 3.7.

7. Q. Please define the overall cost of capital for a public utility.

A. The overall cost of capital for a public utility represents the investor-required rate of return for equivalent investment alternatives in the capital market. The overall cost of capital equals the sum of the costs of the components of the capital structure after weighting each according to its proportion to total capitalization.

8. Q. Why must one determine the overall cost of capital for a public utility?

A. A primary goal of regulation is to properly balance the interests of a utility's ratepayers and investors. This is accomplished by minimizing the cost of reliable service to ratepayers while allowing utilities to earn a fair and reasonable rate of return on rate base. In effect, regulation determines an

allowable rate of return for public utilities that equals the investor-required rate of return for unregulated companies with similar risk characteristics.

When public utilities charge rates that reflect an authorized rate of return that exceeds the cost of capital, consumers are encumbered with excessive prices. Conversely, when public utilities charge rates that reflect an authorized rate of return that is below the cost of capital, the financial integrity of the utility suffers, making it difficult for the utility to attract capital at a reasonable cost. Ultimately, the utility's inability to raise sufficient capital would impair service quality. Consumers are best served when the authorized rate of return on rate base equals the overall cost of capital.

Capital Structure

9. Q. How does a public utility's capital structure affect the overall cost of capital?

A. An optimal capital structure would result in the lowest possible overall cost of capital. Although increasing the proportion of debt capital increases the risk of the company, and consequently, the cost of each capital component, the overall cost of capital declines due to the tax-deductibility of interest payments; however, as the use of debt increases, the costs of default increase as well. Eventually, the costs of default exceed the benefits of tax-deductibility of interest payments, resulting in an increasing cost of capital.

Conversely, the increasing use of equity decreases the degree of financial risk for a company, thereby decreasing the cost of each capital component. However, since returns to equity holders are not tax deductible, the excessive use of equity would result in an unnecessarily high cost of capital.

While there are advantages to employing both debt and equity capital, the excessive use of either can be detrimental to the cost of capital of a public utility. While the management of public utilities is responsible for raising the necessary capital, regulators should assess the capital structure of public utilities to ensure the ratepayers are not paying unreasonable rates due to an unreasonable capital structure.

10. Q. What capital structure did Consumers propose to use for ratemaking purposes?

A. For ratemaking purposes, Consumers proposed a capital structure comprised of 39.81% long-term debt, 6.86% short-term debt, 7.82% preferred equity and 45.52% common equity. The capitalization ratios relating to debt were derived from a 13-month historical average while preferred equity ratio was measured as of December 31, 1999.[1]

The common equity ratio is comprised of the December 31, 1999, retained earnings balance, plus an estimated addition to the common equity balance

[1] Company Schedule D-1.

of $70,071. This addition to the common equity balance represents the average increase in retained earnings for the period of 1991 through 1999, which the Company assumed would remain the same in 2000.[2] The Company's proposed capital structure appears on Schedule 3.7.

11. Q. Are there any problems with Consumers' proposed capital structure for ratemaking purposes?

A. Yes. Foremost, this capital structure, which is based on the historical average capital structure, does not reflect the current capital structure of Consumers. In May 2000, all of Consumers' outstanding debts were consolidated into a five-year line of credit. Thus, since May 2000, the Company has no outstanding short-term debt; rather, the Company will use the five-year line of credit for future short-term borrowing requirements.[3] However, the Company included short-term debt in the proposed capital structure.

Second, the Company is inconsistent in measuring the ratios of the capital structure components. The Company's proposed capital structure includes a preferred stock balance from December 31, 1999, short and long-term debt ratios based on 13-month average balances for 1999, and a common equity ratio based on the December 31, 1999, balance, plus a forecasted addition to retained earnings.

[2] Company response to data request RL 1.08, attached as ICC Staff Exhibit 3.0, Attachment 3.8.

Finally, the Company incorrectly measures both the preferred equity and common equity components of the capital structure. Company Schedule D-1 shows a preferred equity balance of $185,000; however, this balance ignores the Treasury stock balance of ($2,500), which is also shown on Company Schedule D-1. The preferred equity balance for the Company's proposed capital structure should be $182,500, as shown on Company Schedule D-4.

The common equity component of the Company's proposed capital structure is measured incorrectly for two reasons. First, the Company did not include the common stock balance of $125,000 in the common equity balance of $1,007,140. Second, the Company included additional retained earnings of $70,071 in the common equity balance for the proposed capital structure. [4] The addition to common equity is problematic because (1) the amount of additional retained earnings is not known and measurable, (2) the Company provides insufficient support for this forecast, and (3) the forecasted addition to the common equity balance is inconsistent with the other components of the capital structure, since none of the other capital components are adjusted to reflect forecasted changes in their balances. For example, as of October 31, 2000, Consumers had a long-term debt balance of $1,291,286 and a

[3] Company response to data request RL 1.6, attached as ICC Staff Exhibit 3.0, Attachment 3.9.

short-term debt balance of zero. However, the Company's proposed capital structure relies on a historical average for each debt balance, using a long-term debt balance of $942,220 and a short-term debt balance of $162,308.[5]

12. Q. What capital structure is appropriate for setting Consumers' overall rate of return on rate base?

A. Because this proceeding will set rates for future service, under ideal circumstances, the capital structure components should be developed from the best available estimates for the period during which the rates will remain in effect. June 30, 2000, represents the most recent date for which I have balances for each component of Consumers' capital structure. As of June 30, 2000, Consumers' capital structure comprised 39.83% debt, 53.35% common equity and 6.82% preferred equity.[6] These capitalization ratios are consistent with the ratios of A-rated gas distribution utilities.[7] Staff's proposed capital structure appears on Schedule 3.7.

Cost of Long-Term Debt

13. Q. What is the cost of long-term debt capital for Consumers?

[4] Company Schedule D-1.
[5] Company response to data request RL 4.1, attached as ICC Staff Exhibit 3.0, Attachment 3.10.
[6] Company response to data request RL 1.02, Docket No. 00-0584, attached as ICC Staff Exhibit 3.0, Attachment 3.11.
[7] Standard & Poor's Global Utilities Rating Service, *Financial Median Gas Distributors*, March 2000.

A. Consumers' debt capital is in the form of a bank loan and a line-of-credit, with a variable interest rate equal to the prime rate. Currently, Consumers' debt bears an interest rate equal to 9.5%.

Cost of Preferred Stock

14. Q. What is the embedded cost of preferred stock?

A. I agree with the Company that the embedded cost of preferred stock at June 30, 2000, is 6.00%.[8]

Cost of Common Equity

15. Q. How did you measure the cost of common equity for Consumers?

A. I estimated the cost of common equity using the discounted cash flow ("DCF") and risk premium models. Because Consumers' common stock is not market traded, these models cannot be directly applied to Consumers. Instead, I applied those models to a gas utility sample. I then adjusted the sample's cost of common equity for the additional return that investors require for investing in an illiquid investment such as Consumers' common stock.

[8] Company Schedule D-4.

Sample Selection

16. Q. How did you select a sample of public utilities comparable in risk to Consumers?

A. The market-required rate of return on common equity is a function of operating and financial risk. Thus, the method used to select a sample should reflect both the operating and financial characteristics of a firm. The ratios I used to select a sample are: (1) cash flow to capitalization ratio; (2) cash flow to total debt ratio; (3) common equity ratio; (4) expenditures to net utility plant ratio; (5) fixed asset turnover ratio; (6) free cash flow to capitalization ratio; (7) funds flow interest coverage ratio; (8) net cash flow to expenditures ratio; (9) operating profit margin ratio; (10) operating revenue stability ratio; and, (11) operating income before income taxes stability ratio. The last two ratios were measured with the coefficient of determination of a least-squares regression of the natural logarithm of their respective quarterly data against time.[9] The stability ratios were measured over the period 1996 - 1999.[10] Data from the period 1997 - 1999 were averaged to normalize the remaining ratios.

I began with all market-traded electric, natural gas, and water companies on *Standard & Poor's Utility Compustat* data tapes. Among those utilities, 119

[9] Dummy variables were added to the regression model to incorporate seasonality.
[10] Staff usually measures stability ratios over a five-year period; however, the Company could not provide reliable data for the fifth year, 1995 (Company response to Staff data request RL 1.5, attached as ICC Staff Exhibit 3.0, Attachment 3.12).

had sufficient data to permit the calculation of the 11 ratios. Next, I conducted a principal components analysis of the financial and operating ratios. Principal components constitute linear combinations of optimally-weighted variables that are uncorrelated with one another.[11,12] For each utility in the data base, the principal components analysis calculates values for each component, known as principal components scores, which have a mean of zero and a standard deviation of one. From the principal components analysis, I retained four components, or risk indicators, for risk analysis. After calculating the scores for each principal component, I rank-ordered the companies in terms of least relative distance from Consumers' target ratios. Distance was measured by calculating the difference between each principal component score for each firm and Consumers, summing these squared distances and then taking the square root of the summation. Schedule 3.1 presents Consumers and the eight public utilities the least distance from, and therefore, the most comparable to, Consumers that met two criteria: (1) have growth rates published by either Institutional Brokers Estimate Systems ("IBES") or Zacks Investment Research ("Zacks"); and (2) have neither pending nor recently completed significant mergers,

[11] A principal component can be described mathematically as follows:

$$c_i = (b_{i1})(x_1) + (b_{i2})(x_2) + \ldots + (b_{in})(x_n)$$

Where c_i = the utility's score on principal component i;
b_{in} = the weight for ratio x_n to create component c_i; and
x_n = the utility's value on ratio n.

acquisitions, or divestitures. Schedule 3.1 also presents the four principal component scores and the cumulative distance for Consumers and the companies composing the comparable sample.

DCF Analysis

17. Q. Please describe DCF analysis.

A. The DCF model establishes a security's value from investor requirements. According to the DCF model, the value of a given security is equal to the present value of its expected future cash flows. The DCF model assumes the market value of common stock is equal to the sum of the expected future dividends, discounted at the investor-required rate of return.

A basic tenet of the Efficient Market Hypothesis is that the current market price of a security is equal to the true economic value of that security. The Efficient Market Hypothesis posits that a security's market price reflects all available information about the value of a security including the business and financial risks affecting a firm's cash flows. As DCF analysis relies on the market price of a security, direct measurement of that security's investment risk is unnecessary.

[12] The variables are optimally weighted when the resulting principal components explain the maximum amount of variance in the data base.

18. Q. Please describe the DCF model with which you measured the gas utility sample's investor-required rate of return on common equity.

A. The DCF model incorporates time-sensitive valuation factors. Using stock prices, which are based on quarterly dividend payments, in a model that ignores the time value of quarterly cash flows is a misapplication of DCF analysis. Therefore, to estimate the cost of equity for Consumers, I used the following DCF model:

$$k = \frac{\sum_{q=1}^{4} D_{0,q}(1+g)(1+k)^{1-[x+0.25(q-1)]}}{P} + g.$$

Where:

P = the current stock price;

$D_{0,q}$ = the last dividend paid at the end of quarter q, where q=1 to 4;

k = the cost of common equity;

x = the elapsed time between the stock observation and first dividend payment dates, in years; and

g = the expected dividend growth rate.

The model accurately reflects the timing of the quarterly dividend payments of the firms in the gas utility sample. Dividends are modeled to grow at a constant rate and the market value of common stock (i.e., stock price) equals the sum of the discounted value of each dividend.

19. Q. How did you estimate the growth rate parameter?

A. The actual growth expectations of investors cannot be measured directly. Therefore, I averaged the mean long-term growth rate estimates published by IBES and Zacks, which summarize the growth forecasts of financial research analysts employed by brokerage companies. The IBES and Zack's growth rate estimates, and their average for the gas utility sample are presented on Schedule 3.2.

20. Q. How did you measure stock price?

A. For each firm in the gas utility sample, I measured its current stock price with its closing market price from December 1, 2000. Those stock prices appear on Schedule 3.3.

Since a firm's current stock price reflects all relevant information available to investors and, therefore, reflects the investors' assessment of the current value of that firm's common stock, an observed change in the market price does not necessarily indicate a change in the required rate of return on common equity. Price changes may reflect an investor's re-evaluation of the expected dividend growth rate. In addition, stock prices change with the passage of time as dividend payment dates approach. Thus, when estimating the required return on common equity with the DCF model, one

should measure the expected dividend yield and the corresponding expected growth rate concurrently.

21. Q. Please explain the significance of the column titled, "Next Dividend Payment Date," shown on Schedule 3.3.

A. Measuring the time period between each dividend payment date and the one-year anniversary of the stock observation date is necessary to accurately estimate the year-end dividend values of common stock. The beginning of that time period is measured from the "Next Dividend Payment Date". Subsequent dividend payments occur in quarterly intervals.

22. Q. How did you estimate the next four expected quarterly dividends?

A. Most utilities declare and pay the same dividend per share for four consecutive quarters before the dividend is adjusted. The quarterly DCF model assumes a dividend will be adjusted during the same quarter that it was increased the previous year. If the utility did not adjust the dividend per share in the most recent four quarters, I assumed the dividends per share would change during the next quarter. Schedule 3.3 presents the current quarterly dividends. Schedule 3.4 presents the expected quarterly dividends.

23. Q. Based on your DCF analysis, what is the estimated required rate of return on common equity for the gas utility sample?

A. The required rate of return on common equity for the gas utility sample is 10.89%, as shown on Schedule 3.5. The estimate is calculated using the average growth rates shown on Schedule 3.2, the stock price and dividend payment dates shown on Schedule 3.3, and the expected quarterly dividends shown on Schedule 3.4.

Risk Premium Analysis

24. Q. Please describe the risk premium model.

A. The risk premium model explicitly recognizes the market-required rate of return is equal to the risk-free rate of return, plus a risk premium for the additional risk inherent in a particular security. The risk premium model is consistent with the theory that investors are risk-averse and, consequently, demand a risk premium above and beyond the risk-free rate of return for assuming risk.

The Capital Asset Pricing Model ("CAPM") is a one-factor risk premium model that recognizes that investors can minimize their risk through holding diversified portfolios. The CAPM establishes a cost of equity which is equal to the risk-free rate of return, plus a security-specific risk premium. The security-specific risk premium is calculated by determining a risk premium for the market and multiplying that risk premium by the risk of that security relative to the market. In effect, the CAPM determines the compensation, or

investor required rate of return, for the quantity of market risk inherent in an investment, as unique, or non-market, risk may be eliminated through portfolio diversification. The CAPM is mathematically expressed as follows:

$$R_j = R_f + b_j (R_m - R_f)$$

Where:

R_j = the required rate of return for stock *j*;

R_f = the risk-free rate;

R_m = the expected return for the market portfolio; and

b_j = beta, the measure of market risk for stock *j*.

Implementation of the CAPM requires estimates for the risk-free rate of return, the required rate of return on the market, and a security (or portfolio) specific measure of market risk.

25. Q. How did you estimate the risk-free rate of return?

A. I examined two estimates of the risk-free rate of return: the yields on three-month U.S. Treasury bills and thirty-year U.S. Treasury bonds.

26. Q. Why did you examine the yields on U.S. Treasury bills and bonds as measures of the risk-free rate?

A. Ideally, a proxy for the risk-free security will reflect comparable inflation and real risk-free rate expectations to the security being analyzed through the risk

premium model but will not contain a risk premium. Yields on fixed income securities include premiums for default and interest rate risk. Default risk pertains to the possibility the debtor will default on principal or interest payments. U.S. Treasury securities are essentially free of default risk by virtue of the federal government's fiscal and monetary authority. Interest rate risk pertains to the possibility and effect of interest rate fluctuations on the market value of a security.

Theoretically, common equity has an infinite life span, which implies the inflation expectations embodied in the market-required rate of return of common equity reflects the inflation rate anticipated to prevail in the long run. Since U.S. Treasury bonds are issued with the longest term to maturity of any U.S. Treasury security, they are more likely to incorporate within their yields the inflation and real risk-free rate expectations that drive, in part, the prices of common stock than Treasury notes or Treasury bills.

Nonetheless, due to relatively long terms to maturity, the interest rate risk premium inherent in U.S. Treasury bond yields diminish their usefulness as risk-free rate proxies. U.S. Treasury bills, the U.S. Treasury securities issued with the shortest term to maturity, contain a smaller premium for interest rate risk. In terms of interest rate risk, U.S. Treasury bill yields more accurately measure the risk-free rate.

27. Q. Given that the inflation and real risk-free rate expectations that are reflected in the yields on U.S. Treasury bonds and the prices of common stock are similar, does it necessarily follow that the inflation and real risk-free rate expectations that are reflected in the yields on U.S. Treasury bills and the prices of common stocks are dissimilar?

A. No. In the long run, the inflation and real risk-free rate expectations of investors, reflected in the yields on U.S. Treasury bonds, the yields on U.S. Treasury bills, and the prices of common stock, should be equal. However, short-term and long-term expectations may vary over relatively short periods, making it necessary to evaluate whether the short and long-term nominal risk-free rates are currently similar. If those expectations are similar, then the U.S. Treasury bill is the appropriate risk-free rate proxy. If those risk-free rates are dissimilar, then another proxy or a combination of proxies should be used to determine the current nominal risk-free rate.

28. Q. What are the current yields on three-month U.S. Treasury bills and thirty-year U.S. Treasury bonds?

A. As of December 1, 2000, three-month U.S. Treasury bills are yielding 6.38%; thirty-year U.S. Treasury bonds are yielding 5.72%. Schedule 3.6 presents the quotes and resulting yields.

29. Q. Of the U.S. Treasury bill and bond yields, which is currently a better proxy for the long-term risk-free rate?

A. In terms of the gross domestic product ("GDP") price index, WEFA forecasts the inflation rate will average 1.9% annually during the 2000-2019 period.[13] In terms of the consumer price index ("CPI"), the *Survey of Professional Forecasters* ("*Survey*") forecasts the inflation rate will average 2.6% during the 2000-2009 period.[14] In terms of real GDP growth, WEFA forecasts the real risk-free rate will average 3.2% during the 2000-2019 period.[15] The *Survey* forecasts real GDP growth will average 3.1% during the 2000-2009 period.[16] Those forecasts imply a long-term, nominal risk-free rate between 5.2% and 5.9%.[17] Historically, the realized premium for interest rate risk in U.S. Treasury bond yields has averaged 1.4%.[18] Therefore, to the extent inflation and real GDP growth expectations coincide with WEFA and *Survey* forecasts, the U.S. Treasury bond yield more closely approximates the long-term risk-free rate. Nevertheless, the presence of interest rate risk causes U.S. Treasury bond yields to overstate the long-term risk-free rate.

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[13] *U.S. Long-Term Economic Outlook*, vol. 1, WEFA Group, Third Quarter 2000, pp.4.4-4.5.
[14] *Survey of Professional Forecasters,* Federal Reserve Bank of Philadelphia, www.phil.frb.org/files/spf/spfq400.txt. The Survey aggregates the forecasts of approximately 30 forecasters.
[15] *U.S. Long-Term Economic Outlook,* vol. 1, WEFA Group, Third Quarter 2000, pp. 4.2-4.3.
[16] *Survey of Professional Forecasters*, Federal Reserve Bank of Philadelphia, www.phil.frb.org/files/spf/spfq400.txt.
[17] Nominal interest rates are calculated as follows:

$$r = (1 + R)(1 + i) - 1$$

Where: r = nominal interest rate;
R = real interest rate; and
i = inflation rate.

[18] Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation 1999 Yearbook,* p. 185.

30. Q. Please explain why the real risk-free rate and the GDP growth rate should be similar.

A. Risk-free securities provide a rate of return sufficient to compensate investors for the time value of money, which is a function of production opportunities, time preferences for consumption, risk and inflation.[19] The real risk-free rate does not include premiums for risk or inflation; therefore, only production opportunities and the consumption preferences affect it. The real GDP growth rate measures output of goods and services without reflecting inflation expectations and, as such, also reflects both production and consumers' consumption preferences. Therefore, both the real GDP growth rate and the real risk-free rate of return should be similar since both are a function of production opportunities and consumption preferences without the effects of a risk premium or an inflation premium.

31. Q. How was the expected rate of return on the market portfolio estimated?

A. The expected rate of return on the market portfolio was estimated by conducting a DCF analysis on the firms composing the Standard & Poor's 500 Index ("S&P500"). This analysis employs quarterly dividends and closing market prices for these firms as of September 29, 2000, as reported in the October 2, 2000, edition of The Wall Street Journal. Growth estimates were

[19] Brigham and Houston, Fundamentals of Financial Management, 8th edition.

obtained from the September 2000 edition of IBES Monthly Summary Data and September 29, 2000, December 1, 2000, and December 5, 2000, Zack's reports. Firms not paying a dividend as of September 29, 2000, were eliminated from the analysis. The resulting company-specific estimates of the expected rate of return on common equity were then weighted using relative market value data from Salomon Brothers, Performance and Weights of the S&P500: 3rd Quarter 2000. The estimated weighted average expected rate of return for the remaining 382 firms, composing 74.16% of the capitalization of the S&P500, equals 16.11%.

32. Q. How did you measure market risk on a security-specific basis?

A. Beta measures market risk. Specifically, beta measures the sensitivity of a firm's stock price to fluctuations in the market as a whole. I estimated the beta of the gas utility sample using the following least-squares technique:

$$R_{j,t} - R_{f,t} = a + b\,(R_{m,t} - R_{f,t}) + e_t$$

Where:

$R_{j,t}$ = the return on security j in period t;

$R_{f,t}$ = the risk-free rate of return in period t;

$R_{m,t}$ = the return on the market portfolio in period t;

a = the intercept term for security j;

b = beta, the measure of market risk for security j; and

e_t = the residual term in period t for security j.

This beta estimation technique is accomplished in three steps. First, the U.S. Treasury bill yield was subtracted from the average percentage change in both sample stock prices and in the S&P500 in order to estimate each portfolio's monthly price return in excess of the risk-free rate. The monthly excess price returns of the sample were then regressed against the monthly excess price return on S&P500 to estimate a raw beta for the sample. Finally, the raw beta was adjusted to estimate a forward-looking beta, using the following formula:

$$b_{Adjusted} = 0.33743 + 0.66257\ b_{Raw}.$$

33. Q. What is the beta estimate for the gas utility sample?

A. The gas utility sample's beta, estimated over the 60 months ending October 31, 2000, equals 0.50 after adjustment.

34. Q. What required rate of return on common equity does the risk premium model estimate for the gas utility sample?

A. The risk premium model estimates a required rate of return on common equity of 10.92% for the gas utility sample. The computation of the estimate appears on Schedule 3.6.

Cost of Equity Recommendation

35. Q. Based on your entire analysis, what is your estimate of the required rate of return on common equity for the gas utility sample?

A. Both the application of financial models and the analyst's informed judgment are necessary in a comprehensive analysis of the required rate of return on common equity. Although an estimate of the required rate of return based solely on judgment is inappropriate, judgment remains imperative in evaluating the results of such analyses because techniques used to measure the required rate of return on common equity necessarily employ proxies for investor expectations. In addition to DCF and risk premium analyses, I considered the observable 8.01% rate of return the market currently requires on less risky A-rated utility long-term debt.[20] Based on my analysis, in my judgement, the investor-required rate of return for the gas utility sample's common equity ranges from 10.89% to 10.92%.

My estimate of the gas utility sample's investor-required rate of return on common equity is not abridged, revised or biased.[21] Although estimates for individual companies are especially vulnerable to measurement error, the use of a sample reduces the degree of measurement error in the analysis.

[20] *Moody's Long-Term Corporate Bond Yield Averages,* for the week ending December 1, 2000, www.moodys.com/economics.nsf/web/ecoindyd.
[21] Except as discussed above in regard to U.S. Treasury bond yields as proxies for the long-term risk-free rate.

36. Q. Please summarize how you formed the range for the investor-required rate of return on the gas utility sample's common equity.

A. I formed the range from the DCF-derived estimate of the required rate of return on common equity of 10.89% and the CAPM-derived estimate of the required rate of return on common equity of 10.92%.

37. Q. Are any adjustments to the sample's cost of common equity necessary?

A. Yes. Liquidity costs arise from the probability and financial consequences of an investor's inability to sell an asset at the desired time at a predictable price.[22] The gas utility sample comprises market-traded companies whose security prices do not reflect substantial liquidity costs. However, the security prices of small gas utilities, such as Consumers, typically reflect significant liquidity costs, which are largely due to the lack of a market for the securities of such a company.

38. Q. How did you estimate the liquidity premium for Consumers' cost of equity?

A. A direct assessment of the liquidity premium in the cost of Consumers' common equity cannot be performed since the cost of common equity to very small gas utilities is not directly observable. Thus, I based Consumers' liquidity premium on the 149 basis point difference between the current

[22] Bodie, Kane and Marcus, *Investments*, Irwin, 1989 at 423.

8.01% yield on market-traded, A-rated long-term utility bonds and the current prime rate of 9.50%.[23] Therefore, in my judgment, a fair rate of return on common equity for Consumers equals the cost of common equity range for the gas utility sample, 10.89% to 10.92%, plus 149 basis points, or 12.38% to 12.41%.

39. Q. What required rate of return on common equity did Consumers propose for ratemaking purposes?

A. Consumers proposed a return on common equity of 13.00%.[24] No specific analyses support this rate of return on common equity.[25]

The Company lists a number of reasons in support of a 13.00% rate of return on common equity, including a lack of business growth due to economic conditions in the Company's service territory, extremely weather sensitive revenues, and the need for operational capital. According to the Company, the economic risk related to an investment in Consumers is greater than the risk related to an investment in a publicly held company or other medium-sized gas distribution companies in central or northern Illinois, where the heating season is longer.[26]

[23] *Moody's Long-Term Corporate Bond Yield Averages,* for the week ending December 1, 2000, www.moodys.com/economics.nsf/web/ecoindyd.
[24] Company Exhibit CAR 01.
[25] Company response to data request RL 1.9, attached as ICC Staff Exhibit 3.0, Attachment 3.13.
[26] Company Exhibit CAR 01.

40. Q. Are there any problems with Consumers proposed return on common equity?

A. Yes. The market-required rate of return on common equity is a function of both operating and financial risks. However, the Company did not quantify those risks. In contrast, my quantitative analysis incorporates financial and operating risks that are relevant in estimating the cost of common equity because my gas utility sample was selected using a set of ratios that reflects the Company's risk characteristics. Therefore, my cost of equity estimate, derived from the comparable sample analysis, embodies the risk characteristics of the company.

Overall Cost of Capital Recommendation

41. Q. What is the overall cost of capital for Consumers?

A. As shown in Schedule 3.7, the overall cost of capital for Consumers is 10.81%. This estimate incorporates a 12.40% cost of common equity.

42. Q. Does this conclude your direct testimony?

A. Yes, it does.

CONSUMERS GAS COMPANY

Comparable Sample Analysis

Company Name	Factor 1	Factor 2	Factor 3	Factor 4	Cumulative Distance
AGL Resources Inc.	0.033	0.074	-0.254	0.267	2.336
Laclede Gas Company	1.048	-0.146	-0.508	0.902	2.490
Peoples Energy Corp.	1.570	-0.115	-0.222	0.788	2.546
Nicor Inc.	2.850	0.899	-0.154	0.876	2.580
New Jersey Resources	-0.063	0.022	-0.764	1.024	2.607
Energy West Inc.	0.238	-0.293	-1.151	0.817	2.649
Piedmont Natural Gas Co.	0.511	-0.307	-0.120	1.173	2.902
Cascade Natural Gas Corp.	-0.300	-0.085	-0.071	1.159	2.997
Comparable Sample Average	0.736	0.006	-0.406	0.876	
Consumers Gas Company	**1.012**	**1.971**	**-1.005**	**-0.311**	

Source: Standard & Poor's, *Utility Compustat*.

CONSUMERS GAS COMPANY

Growth Rate Estimates

Company Name	Zacks Earnings	IBES Earnings	Average
AGL Resources Inc.	5.71%	5.95%	5.83%
Laclede Gas Company	3.67	3.67	3.67
Peoples Energy Corp.	5.44	6.25	5.85
Nicor Inc.	6.32	6.13	6.23
New Jersey Resources	6.63	6.50	6.57
Energy West, Inc.	NA	5.00	5.00
Piedmont Natural Gas Co.	6.00	5.67	5.84
Cascade Natural Gas Corp.	6.00	4.20	5.10

Sources: *Zack's Investment Research,* December 1, 2000.
Institutional Brokers Estimate System, November 15, 2000.

CONSUMERS GAS COMPANY

Company	Current Dividend $D_{0.1}$	$D_{0.2}$	$D_{0.3}$	$D_{0.4}$	Next Dividend Payment	Stock Price
AGL Resources Inc.	$0.270	$0.270	$0.270	$0.270	03/01/01	$22.4400
Laclede Gas Company	0.335	0.335	0.335	0.335	01/02/01	22.5600
Peoples Energy Corp.	0.490	0.500	0.500	0.500	01/15/01	41.7500
Nicor Inc.	0.390	0.415	0.415	0.415	02/01/01	38.6900
New Jersey Resources	0.430	0.430	0.430	0.430	01/02/01	40.6300
Energy West, Inc.	0.120	0.120	0.125	0.125	12/29/00	9.1300
Piedmont Natural Gas Co.	0.345	0.365	0.365	0.365	01/15/01	33.6900
Cascade Natural Gas Corp.	0.240	0.240	0.240	0.240	02/15/01	17.8800

Sources: The Wall Street Journal, December 4, 2000.
Standard & Poor's, *Utility Compustat.*

CONSUMERS GAS COMPANY

Company	Expected Quarterly Dividend $D_{1,1}$	$D_{1,2}$	$D_{1,3}$	$D_{1,4}$
AGL Resources Inc.	$0.286	$0.286	$0.286	$0.286
Laclede Gas Company	0.335	0.347	0.347	0.347
Peoples Energy Corp.	0.500	0.529	0.529	0.529
Nicor Inc.	0.415	0.441	0.441	0.441
New Jersey Resources	0.440	0.458	0.458	0.458
Energy West, Inc.	0.125	0.125	0.131	0.131
Piedmont Natural Gas Co.	0.365	0.386	0.386	0.386
Cascade Natural Gas Corp.	0.252	0.252	0.252	0.252

Source: Schedules 3.2 and 3.3.

CONSUMERS GAS COMPANY

Cost of Equity Estimates

Company Name	Cost of Equity
AGL Resources Inc.	11.13%
Laclede Gas Company	10.10
Peoples Energy Corp.	11.12
Nicor Inc.	10.93
New Jersey Resources	11.30
Energy West, Inc.	10.94
Piedmont Natural Gas Co.	10.59
Cascade Natural Gas Corp.	11.00
AVERAGE =	10.89%

CONSUMERS GAS COMPANY

Risk Premium Analysis

U.S. Treasury Bills[1]		U.S Treasury Bonds [2]	
Discount Rate	Effective Yield	Discount Rate	Effective Yield
6.05%	6.38%	5.64%	5.72%

Risk Premium Cost of Equity Estimate

Risk-Free Rate		Beta		Risk Premium		Cost of Common Equity
5.72%	+	0.50	X	(16.11%-5.72%)	=	10.92%

[1] U.S. Treasury bill yields are quoted on a 360-day discount basis. The effective yield is determined as follows:

$$Effective\ yield = \left(1 + \frac{discount\ rate \times \left(\frac{days\ to\ maturity}{360}\right)}{1 - discount\ rate \times \left(\frac{days\ to\ maturity}{360}\right)}\right)^{\left(\frac{365}{days\ to\ maturity}\right)} - 1$$

where *days to maturity* equals ninety-one days.

[2] The bond equivalent yield on U.S. Treasury bonds represents a nominal rather than an effective yield. The effective yield is calculated as follows:

$$Effective\ yield = [1 + (bond\ equivalent\ yield \div 2)]^2 - 1.$$

CONSUMERS GAS COMPANY

STAFF PROPOSAL:

	Amount	Percent of Total Capital	Cost	Weighted Cost
Debt	$1,066,286	39.83%	9.50%	3.78%
Preferred Stock	$182,500	6.82%	6.00%	0.41%
Common Equity	$1,428,035	53.35%	12.40%	6.62%
Total Capital	$2,676,821	100.00%		

Weighted Average Cost of Capital = 10.81%

COMPANY PROPOSAL

	Amount	Percent of Total Capital	Cost	Weighted Cost
Long-Term Debt	$942,220	39.81%	9.50%	3.78%
Short-Term Debt	$162,308	6.86%	9.21%	0.63%
Preferred Stock	$185,000	7.82%	6.00%	0.47%
Common Equity	$1,077,211	45.51%	13.00%	5.92%
Total Capital	$2,366,739	100.00%		

Weighted Average Cost of Capital = 10.80%

Sources: Company Schedule D-1
Schedules 3.5 and 3.6.

CONSUMERS GAS COMPANY **ICC Docket 00-0618**

Response to Data Request RL-1.08

Submitted by: Paul G. Neff, USDI Consultant October 22, 2000
618-943-3326

DATA REQUESTED:

Please explain how Consumers determined an estimated addition of $70,071 to the common equity balance shown on schedule D-1. Please provide all sources, supporting work papers and documents.

RESPONSE:

The estimated addition to common equity of $70,071 represents the average increase in common equity for the period of 1991 through 1999, less dividends (assumed to be the same as 1999).

The calculation is as follows:

1999 Ending Balance	$1,049,340.
1991 Ending Balance	38,903.
Increase	$1,010,437.
Divided by 9 = average	$ 112,271
Less Dividends	(42,200)
Net estimated addition	$ 70,071

The source for all data were ICC Form 21 for the years listed.

CONSUMERS GAS COMPANY

Response to Data Request RL1.6

Submitted by: C. A. Robinson, President
812-477-9030

October 20, 2000

DATA REQUESTED:

Please provide a monthly balance of short-term debt and construction-work-in-progress for all of 2000. In addition, please proveide a forecasted monthly ending balance of short-term debt throught July 31, 2001.

RESPONSE:

The short term debt for the Company in 2000 was as follows:

January	$186,000
February	$176,000
March	$166,000
April	$166,406
May	$ 0*

* In May all outstanding debts were consolidating to a 5-year line of credit whcih is currently before the Commission for approval - ICC Docket No. 00-9584

There will be no short term debt after May 2000 as we will be using our 5-year line of credit for future short term money requirements.

CONSUMERS GAS COMPANY **ICC DOCKE**

STAFF DATA REQUEST RL 4.1

C. A. Robinson, President
(812) 477-9030

REQUEST: Please provide the outstanding balance for the line-of-credit as of (1) September 30, 2000 and (2) October 31, 2000, for Consumers Gas Company.

RESPONSE:

1. September 30, 2000 outstanding balance was $1,191,286.25

2. October 31, 2000 outstanding balance was $1,291,286.25.

BALANCE SHEET
JUNE 30, 2000

Docket Nos. 00-0575/00-0618
(Consolidated)
ICC Staff Exhibit 3.0
Attachment 3.11
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ASSETS

INTANGIBLE PLANT		
ORGANIZATION	$45.44	
FRANCHISES & CONSENTS	5,557.65	
TOTAL INTANGIBLE PLANT		5,603.09
TRANSMISSION PLANT		
LAND & LAND RIGHTS	193.99	
RIGHTS-OF-WAY	1,097.94	
STRUCTURES & IMPROVEMENTS	1,775.04	
MAINS	1,085,844.84	
MESA.& REGUL.STAT.EQUIP	28,944.88	
TOTAL TRANSMISSION PLANT		1,117,856.69
DISTRIBUTION PLANT		
DISTRIBUTION PLANT	13.32	
LAND & LAND RIGHTS	7,631.51	
STURCTURES & IMPROVEMENTS	19,562.08	
MAINS	1,782,908.50	
MEAS. & REGUL.STA.EQUIP.	328,757.13	
SERVICES	1,597,196.17	
METERS	543,295.97	
HOUSE REGULATORS	3,792.70	
OTHER EQUIPMENT	10,588.35	
TOTAL DISTRIBUTION PLANT		4,293,745.73
GENERAL PLANT		
STRUCTURES & IMPROVEMENTS	342,003.38	
OFFICE FURN.& EQUIPMENT	49,416.14	
COMPUTER EQUIPMENT	131,630.98	
TRANS.EQUIP.-AUTO/OTHER	14,046.75	
TRANSP.EQUIP.-AUTO	89,152.74	
TOOLS,SHOP & GARAGE EQUIP.	39,315.12	
LABORATORY EQUIP.	281.00	
POWER OPERATED EQUIP.	67,531.36	
COMMUNICATION EQUIP.	27,948.32	
ACCUM.DEPR.-AUTO & POW.EQUIP	(156,391.72)	
ACCUMDEPR.-DISTRIBUTION PLANT	(2,494,463.63)	
ACCUM DEPR.- GENERAL	(311,147.02)	
ACCUM.DEPR.-TRANSMISSION EQUP	(1,045,495.68)	
TOTAL GENERAL PLANT		(3,246,172.26)

CONSUMERS GAS COMPANY
BALANCE SHEET
JUNE 30, 2000

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ASSETS

CURRENT ASSETS		
1ST. NATIONAL BANK (CARMI)	$(.04)	
BANTERRA BANK - RIDGWAY	16,911.02	
OLD NATIONAL BANK(E'VILLE)	48,152.20	
CITIZENS NAT'L.BK.(ALBION)	14,685.83	
1ST.STATE BK. (WEST SALEM)	6,382.76	
ONB-MARKET MONITOR	350,985.92	
CASH ON HAND (CARMI)	700.00	
CASH ON HAND (OTHER)	565.00	
CASH ON HAND-E'VILLE	50.00	
A/R-GAS	165,816.55	
A/R DELINQUENT ACCOUNTS	16,528.84	
A/R DEFERRED PMT. AGREEMENT	1,052.65	
PROV. FOR UNCOLLECTABLE ACCTS	(73,507.69)	
PLANT MATERIAL & SUPPLIES	22,830.61	
MERCH. - MATERIAL & SUPPLIES	65.94	
GAS STORED UNDERGROUND	143,679.74	
TOTAL CURRENT ASSETS		714,899.33
OTHER ASSETS		
UNAMORTIZED DEBT EXPENSE	9,093.34	
TOTAL OTHER ASSETS		9,093.34
CURRENT ASSETS		
CLEARING ACCT.-TRANSP. EXP.	(6.49)	
CLEARING ACCT. - TOOLS & EQUIP	6.49	
TOTAL CURRENT ASSETS		.00
OTHER ASSETS		
DEFERRED DEBIT - '99 RATE CASE	20,763.40	
DEFERRED TAX BENEFIT-NONCURR	28,668.00	
TOTAL OTHER ASSETS		49,431.40
TOTAL ASSETS		$2,944,457.32

CONSUMERS GAS COMPANY
BALANCE SHEET
JUNE 30, 2000

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LIABILITIES AND STIOCKHOLDERS EQUITY

CURRENT LIABILITIES		
IL STATE INCOME TAX PAYABLE	$.02	
FEDERAL INCOME TAX PAYABLE	(10.00)	
ACCOUNTS PAYABLE - TRADE	140,017.89	
REEFUND DUE GAS ACCT.CUST.	(189,772.30)	
CUSTOMER CASH REFUND	69,197.90	
ACCRUED PENSION BENEFITS	814.11	
EMPLOYEE INS. W/H PAYABLE	(319.64)	
EMPLOYEE PENSION W/H	.09	
TAXES ACCRUED-(GAS REVENUE)	(2,433.04)	
TAX.ACCR.-(ICT#G-3)PUB.UTL	(518.49)	
INVESTED CAPITAL TAX ACCURAL	87.29	
IND.ST.W/H TAX PAYABLE	(6.70)	
IL. ST. W/H TAX PAYABLE	(.01)	
VAND.CTY.W/H TAX PAYABLE	(.01)	
TAX COLLECT.PAY.-SALES&USE	1.43	
TAX COLLECT.PAY.-MUN.UTL,	15,290.05	
TAX COLLECT.PAY.-MUN.UTIL.	245.03	
TAX COLLECT.PAY.-MUN.UTIL.	1,767.39	
OTHER DEFERRED CREDITS	(100.00)	
UNAMORTIZED INVESTMENT CR.	15,525.06	
■FERRED TAX LIABILITY	218,163.00	
TOTAL CURRENT LIABILITIES		267,949.07
DEFERRED CREDITS		
CAPITAL STOCK EXPENSE	(312.50)	
TOTAL DEFERRED CREDITS		(312.50)
LONG-TERM LIABILITIES		
NOTES PAYABLE - ONB	1,066,286.25	
TOTAL LONG-TERM LIABILITIES		1,066,286.25
TOTAL LIABILITIES		1,333,922.82
SHAREHOLDERS EQUITY		
COMMON CAPITOL STOCK	125,000.00	
PREFERRED STOCK	185,000.00	
PREMIUM CAPITAL STOCK	287,498.00	
RETAINED EARNINGS - PRIOR	1,049,340.14	
RETAINED EARNINGS-CURRENT YEAR	50,596.34	
DIVIDEND DECLARED - PREFER.	(21,900.00)	
CLARED DIVIDEND-COMMON	(62,499.98)	
REACQUIRED PREFERRED STOCK	(2,500.00)	

CONSUMERS GAS COMPANY
BALANCE SHEET
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LIABILITIES AND STIOCKHOLDERS EQUITY (Continued)

SHAREHOLDERS EQUITY (Continued)

TOTAL SHAREHOLDERS EQUITY	$1,610,534.50
TOTAL LIABILITIES AND STIOCKHOLDERS EQUITY	$2,944,457.32

CONSUMERS GAS COMPANY

C. A. ROBINSON - PRESIDENT
812/477-9030

ICC DOCKET NO. 00-0618
STAFF DATA REQUEST RL 1.5

For year 1995	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	TOTAL FOR YEAR
Total Operating Revenue					3,821,875
Operating Income					355,969
Operating Income Taxes					-
Net Income					257,178

For year 1996	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	TOTAL FOR YEAR
Total Operating Revenue	2,492,574	802,187	523,656	1,477,706	5,296,123
Operating Income	217,372	41,973	(66,307)	203,370	396,407
Operating Income Taxes				61,201	61,201
Net Income	217,372	41,973	(66,308)	54,057	247,094

For year 1997	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	TOTAL FOR YEAR
Total Operating Revenue	1,948,737	969,599	478,443	1,395,884	4,792,663
Operating Income	237,092	38,007	(102,780)	132,037	304,355
Operating Income Taxes	-	-	-	48,165	48,165
Net Income	237,092	38,007	(102,780)	83,872	211,366

For year 1998	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	TOTAL FOR YEAR
Total Operating Revenue	1,737,679	563,483	494,267	980,354	3,775,783
Operating Income	303,506	157,740	(82,760)	(150,981)	227,506
Operating Income Taxes	-	-	-	34,162	34,162
Net Income	303,506	157,740	(82,760)	(185,143)	193,344

For year 1999	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	TOTAL FOR YEAR
Total Operating Revenue	1,596,695	674,864	514,325	1,199,158	3,985,042
Operating Income	234,702	(19,105)	(263,192)	311,753	264,159
Operating Income Taxes	-	-	-	66,834	66,834
Net Income	234,702	(19,105)	(263,192)	244,919	132,132

NOTE: Quarterly figures for 1995 are unavailable.
As Consumers does not compile quarterly reports this review is based on monthly reports. Income tax is not figured by month but on annual year end close therefore is shown in 4th Quarter only.

CONSUMERS GAS COMPANY

Response to Data Request RL1.9

Submitted by: C. A. Robinson, President
812-477-9030

October 20, 2000

DATA REQUESTED:

Please explain how Consumers determined a 13% return on equity, Please provide all analyses, including supporting sources, work papers, and documents.

RESPONSE:

Although there were no specific analyses performed, we did consider several factors in arriving at this amount.

As a small gas company, without a large industrial base, our revenues are extremely weather sensitive, which can adversely affect earnings from year to year, and therefore adds to the risk for our stockholders.

As we are currently allowed a 12.72% return on equity (as ordered in ICC Docket 92-0293) and in light of the trends in both the stock markets and interest rates, we felt that 13% was reasonable and justified.